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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,573	12/12/2003	Francis T. McGreevy	24.352	2552

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EXAMINER	
CHANG, SUNRAY	

ART UNIT	PAPER NUMBER
2121	

DATE MAILED: 08/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/735,573	MCGREEVY, FRANCIS T.	
	Examiner	Art Unit	
	Sunray Chang	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-111* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-111* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *031212 04426 05720*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1 – 111 are presented for examination.

Claims 1 – 111 are rejected.

Information Disclosure Statement

2. The information disclosure statements (IDS), submitted on December 12th, 2003, April 26th, 2004 and July 20th, 2005, have been considered by the examiner.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. **Claims 1 – 3, 5, 9, 17 – 19, 25, 53, 66 – 71, 73, 81, 82, 97 and 100 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Fritz Peter (U.S. Patent No. 6,175,610 and referred to as **Peter** hereinafter), and in view of Wolfgang R. Daum (U.S. Patent No. 5,599,151 and referred to as **Daum** hereinafter).

(**Peter** as set forth above generally discloses the basic inventions.)

Regarding claims 1, 3, 5, 17, 18, 25, 53, 66, 70, 81, 82, 97 and 100

Peter teaches,

- A virtual control system [a virtual system, Col. 1, line 57 – Col. 2, line 13] for controlling surgical equipment [medical-technical system, Col. 1, lines 7 – 9] in an operating room [operation site, Col. 3, lines 41 – 42] while a surgeon performs a surgical procedure on a patient [operation, Col. 3, lines 3 – 7], comprising:
- a virtual control device including an image of a control device located on a surface [a projector projects, on a projection surface, images of at least one operating element for at least one system components, Col. 1, lines 39 – 46] and
- a sensor for interrogating interaction of an object with the image on the surface, [visual detector detects the position and/or motion of an appendage of an operator on the projection surface, Col. 1, lines 46 – 53]
- the virtual control device delivering an interaction signal indicative of the interaction of the object with the image; [detector generates a detector output dependent on the detected position and/or motion, Col. 1, lines 49 – 50] and

- a system controller connected to receive the interaction signal from the virtual control device and to deliver a control signal to the surgical equipment in response to the interaction signal to control the surgical equipment in response to the interaction of the object with the image. [the output of the detector is supplied to a control unit, which controls the system component dependent on the detected movement and/or position, Col. 1, lines 50 – 53]

Peter teaches medical-technical system, yet does not specify a surgery medical-technical system.

Daum teaches surgical equipments and surgical procedure [Abstract, Col. 1, lines 5 – 6; see further Col. 3, lines 9 – 41, Col. 5, lines 25 – 40], for the purpose of working in inaccessible areas and cavities, Col. 1, lines 5 – 6].

It would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to modify the teaching of **Peter** to specify the medical-technical system can be surgery system,for the purpose of working in inaccessible areas and cavities, Col. 1, lines 5 – 6].

Regarding claims 2, 67, 68 and 73,

- the object is one of a finger or a foot of the surgeon; [Col. 2, lines 54 – 56]
- the image is one of a projected light image or a printed image; [a projector projects on a projection surface, images of at least one operating element, Col. 1, lines 41 – 42; Fig. 10]
- the image includes at least one contact control area; [the output of the detector is supplied to a control unit, which controls the system component dependent on the detected movement and/or position, Col. 1, lines 50 – 53] and

- the interaction with the image is contact of the object with the contact control area. [detected position and/or motion, Col. 1, lines 39 – 56]

Regarding claims 4 and 69

- the object is a finger of the surgeon; [Col. 1, lines 54 – 56]
- the image of the control device is an image for a control panel of the surgical equipment; [Col. 1, lines 49 – 53]
- the image includes a contact control area which represents a control function of the surgical equipment; [Col. 2, lines 4 – 13]
- the interaction with the image is contact of the surgeon's finger with the contact control area; Col. 1, lines 39 – 56] and
- the image of the control panel is located within a sterile field of the surgical procedure. [operation site, Col. 3, lines 41 – 42; Fig. 7]

Regarding claim 6,

- the image of the control panel includes a multiplicity of different contact control areas, [Fig. 8 – 10]
- each contact control area representing a different control function of the surgical equipment; [Fig. 8 – 10] and
- the sensor optically interrogates the interaction of the object with each of the different contact control areas. [Col. 1, lines 46 – 53]

Regarding claims 7 and 71,

- the virtual control device projects the image of the control panel on surgical drapes adjacent to a surgical site and within the sterile field. [Fig. 7]

Regarding claim 19,

Peter teaches,

- the signal supplied by the optical sensor relates to the degree of separation of the object from the contact control area. [position of the finger on the projection surface, Col. 2, lines 4 – 13]

4. **Claims 8 – 10, 74 and 75 are rejected** under 35 U.S.C. 103(a) as being unpatentable over **Peter** in view of **Daum**, further in view of Yulun Wang (U.S. Patent No. 5,524,180 and referred to as **Wang** hereinafter)

Regarding claims 8, 74 and 75

Peter and **Daum** do not teach the object is a foot of the surgeon to control the system.

Wang teaches foot controlling a surgical system [a computer which controls the movement of the robotic arm in response to input signals received from the foot pedal can be operated by the foot of a surgeon, Abstract], for the purpose of remotely controlling the position of a surgical instrument, Col. 1, line 13]

Regarding claim 9,

Peter teaches,

- the sensor optically interrogates the interaction of the object with the image. [visual detector detects the position and/or motion of an appendage of an operator on the projection surface, Col. 1, lines 46 – 53]

Regarding claim 10,

Peter teaches,

- the contact control area of the image represents an activation function of the surgical equipment. [carries out the actuation of the operating step corresponding the the respective operating element, Col. 4, lines 14 – 15]

5. **Claim 11 are rejected** under 35 U.S.C. 103(a) as being unpatentable over **Peter** in view of **Daum**, further in view of **Wang** and Nestor Voronka (U.S. Patent No. 6,801,637 and referred to as **Voronka** hereinafter)

Peter, Daum and **Wang** do not teach a position tag to be attached to the surgeon's foot and the sensor optically interrogates the position of the position tag.

Voronka teaches position tags can be attached to several different places on a human body [Fig. 1] for the purpose of optically monitoring and recording full-body and partial-body movements. [Col. 1, lines 15 – 17]

6. **Claim 12 – 16, 20 – 24, 72, 76 – 80 and 101 are rejected** under 35 U.S.C. 103(a) as being unpatentable over **Peter** in view of **Daum**, further in view of **Wang, Voronka** and Carlo Tomasi (U.S. Patent No. 6,710,770 and referred to as **Tomasi** hereinafter)

Peter, Daum, Wang and **Voronka** do not teach the image projector projects the image of the contact control area on the floor at a position relative to the interrogated position of the position tag.

Tomasi teaches the image projector projects the image of the contact control area on the floor at a position relative to the interrogated position of the position tag [localize the point of interaction or intersection which plane, Col. 9, lines 51 – 62; further se Col. 9, line 63 – Col. 10, line 51] for the purpose of localize the point of interaction or intersection which plane. [Col. 9, lines 51 – 62]

Tomasi further teaches,

- a device controller connected to the light source and sensor and which is operative to determine interaction of the object with the contact control area based on relative timing information between corresponding pulses of the incident light and the reflected light and the scanning angle of the incident light which causes the reflected light. [Col. 3, line 56 – Col. 4, line 5]
- an image projector to project a beam of image light to create the image and the contact control area of the image. [Fig. 1A, 1B, 1C]

- the device controller is connected to the light source to control the scanning angles of the pulsed beam of incident light in correlation with the projection angles of the beam of image light; [Col. 2, line 60 – Col. 3, line 33] and
- the device controller interrogates interaction of the object with the contact control area based on the correlated relationship between scanning angles of the incident light and the projection angles of the image light and the relative timing between corresponding pulses of the incident light and the reflected light. [Col. 3, line 27 – 33]

7. **Claims 26 – 33, 48, 49, 62 – 65, 84, 85, 94 – 96, 98, 102 and 108 – 111 are rejected** under 35 U.S.C. 103(a) as being unpatentable over **Peter** in view of **Daum**, further in view of Jerome H. Lemelson (U.S. Patent No. 6,847,336 and referred to as **Lemelson** hereinafter)

Peter and **Daum** do not teach a heads up projector projects on a face shield the patient's condition, functionality of the surgical equipment, and surgeon's procedure.

Lemelson teaches a heads up projector projects on a face shield the patient's condition, functionality of the surgical equipment, and surgeon's procedure. [Abstract; Fig. 1 & 2, Col. 1, lines 6 – 12, Col. 4, line 64 – Col. 6, line 49] for the purpose of providing a hand free heads-up display system. [Col. 4, lines 64 – 67]

Lemelson further teaches a speech recognition. [Col. 5, line 15 – Col. 6, line 9], for the purpose of providing a hand free heads-up display system. [Col. 4, lines 64 – 67]

8. **Claims 34 – 47, 50 – 52, 57 – 61, 83, 86 – 93, 99 and 103 – 107, are rejected** under 35 U.S.C. 103(a) as being unpatentable over **Peter** in view of **Daum**, further in view of **Lemelson** and Michael Irl Rabin (U.S. Patent No. 6,603,464 and referred to as **Rabin** hereinafter)

Peter, Daum and **Lemelson** do not teach a scanner scanning the ID tag to get information from patients, equipments and surgeons.

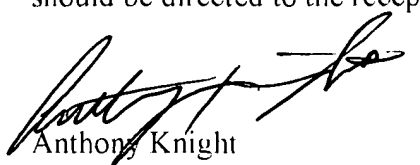
Rabin teaches a scanner scanning the ID tag to get information from patients, equipments and surgeons for use in medical field and a password protection [Col. 6, line 42 – Col. 8, line 23] for the purpose of capturing identification information. [Col. 6, lines 42 – 43]

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sunray Chang whose telephone number is (571) 272-3682. The examiner can normally be reached on M-F 7:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on (571) 272-3687. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-746-3506.



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August 21, 2006